

Field Service Report

Date: 4/7/2011

Customer: API Electric
4330 West 1st Street
Duluth, MN 55807

Work Site: NOVA Project

Attention: Mr. Floyd Cochran

Date Work Performed: 4/5/2011

Client Purchase Order#: 62101-26057

Equipment Serviced: Fall of Potential Ground Testing

Summary:

The overall condition of the equipment tested was found to be good. Please see the individual report for any comments or recommendations.

We appreciate this opportunity to be of service and look forward to being of service to you again. Should you have any questions, please do not hesitate to call me at 763-717-3136 or your account manager, Joe Schommer, at 612-991-7555.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Gryzmala', with a stylized flourish at the end.

Jim Gryzmala
Project Manager

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Customer API Electric
Jobsite NOVA Project
Plant _____

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GROUND MAT TEST

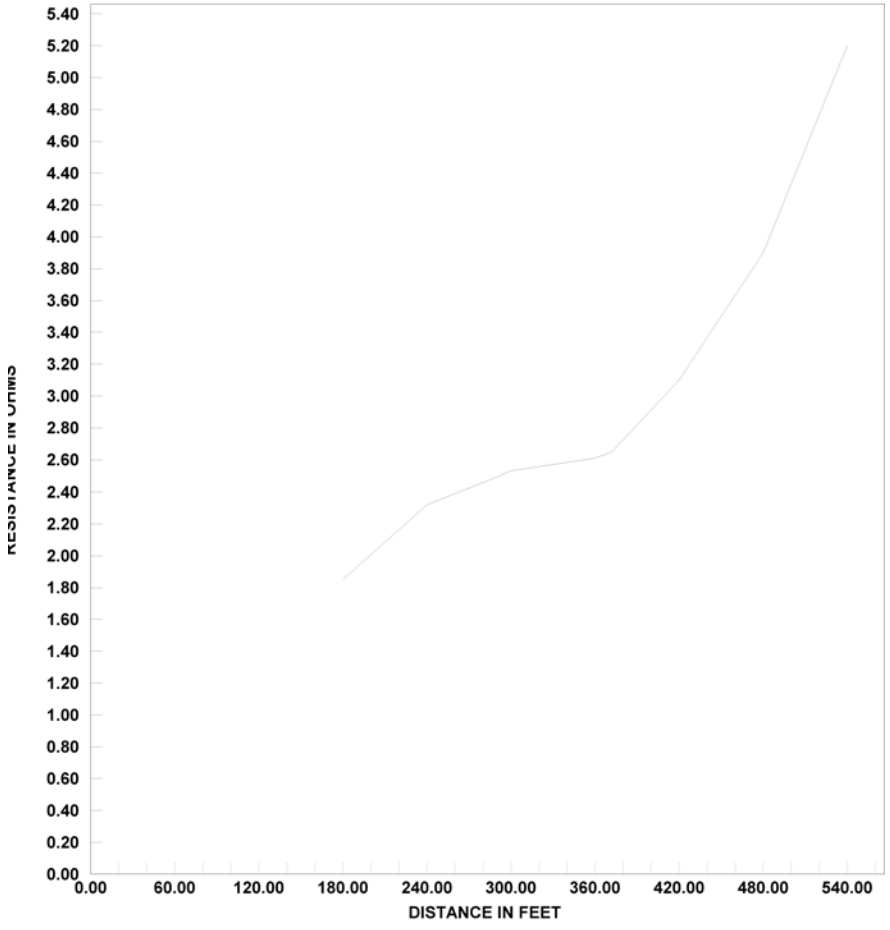


CUSTOMER API Electric PAGE 1
 JOB SITE NAME, CITY, STATE NOVA Project; Orr, MN DYNAMAX SHOP JOB # 18292
 DATE 4/5/2011 TEMPERATURE 35 °F HUMIDITY 40 % EQPT. LOCATION _____
 SUBSTATION Main Ground Grid FEEDER Main

TYPE OF GROUND ROD Copper Clad NUMBER OF RODS 38
 DIAMETER OF GROUND ROD 3/4" LENGTH OF GROUND RODS 10 feet
 SOIL TYPE Rock / Fill SOIL CONDITION: DRY DAMP WET
 CONNECTING CONDUCTOR SIZE 4/0 CONNECTING CONDUCTOR BARE INSULATED
 CURRENT TRANSFORMER TYPE: BAR TYPE
 WINDOW: SOLID SPLIT CORE
 STYLE: ROUND RECTANGULAR

AUXILIARY POTENTIAL ELECTRODE

DISTANCE IN FEET	RESISTANCE IN OHMS
540	5.2
480	3.9
420	3.1
372	2.65
360	2.61
300	2.53
240	2.32
180	1.85



GROUND RESISTANCE @ 61.8% OF DISTANCE 2.65 OHMS

TEST TYPE: FALL OF POTENTIAL
 TWO-POINT
 INDUCED FREQUENCY

COMMENTS: Ground grid approximate diameter is 480 feet. Performed test to 600 feet. Not applicable to perform test any further do to dense forest near site. Performed test at emergency generator outside the building and went out 600 feet to the right of the building as your looking at it from the entrance road. Performed point-to-point resistance test from the generator to the main ground bus inside the main switch gear room. Results were 174 milliohms.

DEFICIENCIES:

EQPT. INVENTORY NO. _____ Test Technician: Joel Trites

**Comment Summary
Job #18292**

Customer API Electric
Jobsite NOVA Project

Plant: <None>

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Substation: Main Ground Grid

Date: 4/5/2011

Feeder: Main

Equipment: 24020 - GROUND MAT TEST - 20

Comments: Ground grid approximate diameter is 480 feet. Performed test to 600 feet. Not applicable to perform test any further do to dense forest near site. Performed test at emergency generator outside the building and went out 600 feet to the right of the building as your looking at it from the entrance road. Performed point-to-point resistance test from the generator to the main ground bus inside the main switch gear room. Results were 174 miliohms.